

DEFENSE THREAT REDUCTION AGENCY

BROAD AGENCY ANNOUNCEMENT

HDTRA1-17-S-0003



NEW INITIATIVES FOR NUCLEAR DETECTION AND MONITORING AND VERIFICATION TECHNOLOGIES

28 February 2017

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1.0 General Information

1.1 Broad Agency Announcement (BAA) Introduction

This publication constitutes a BAA as described in Federal Acquisition Regulation (FAR) Part 35.016 and FAR 6.102(d)(2). This BAA is a competitive solicitation of proposals focused on research and development of technologies to meet the mission of the Defense Threat Reduction Agency (DTRA). Formal Request for Proposals regarding this announcement will not be issued.

1.2 BAA Open Period

This BAA will remain open until 5 April 2017, 1400 Eastern Time. Submission information is provided in Section 3.3 of this BAA and estimated milestones are listed in Section 6.0.

1.3 Research Opportunity Description

DTRA provides the U.S. Department of Defense's (DoD) main support capabilities for countering weapons of mass destruction (WMD), including chemical, biological, radiological, nuclear, and high-yield explosive threats. DTRA's mission is to safeguard the U.S. and its allies from global WMD threats by integrating; synchronizing; and providing expertise, technologies and capabilities.

DTRA seeks proposals to identify technologies that fill capability needs related to nuclear detection and monitoring and verification technologies. Specific topics for this BAA solicitation are listed in Section 7.0. Proposed technology solutions must provide substantial improvements over current capabilities and technologies or provide new capabilities while simultaneously meeting suitability and maintainability requirements for military operations. Areas of major improvement may include, but are not limited to: size, weight, power consumption, cost, compatibility, and background mitigation.

This BAA is limited to projects that meet Technology Readiness Level (TRL) definitions in the TRL range 3–6. Upon completion of proposed developmental efforts, solutions should strive to meet a TRL in the range 4–6. Solutions may focus on end-item prototypes or enabling technologies; however, basic research proposals will not be considered.

DTRA intends to fund awarded efforts in Fiscal Year 2018 (FY18) with periods of performance in the range of 1–3 years. Exceptions, not to exceed five years, may be considered for projects that merit extensive test and evaluation. Proposals should be structured with a short base period (~6 months) followed by option periods (6-12 months) to provide timely decision points for down-selection of promising technologies. Individual contracts are expected to be funded in the range \$500,000–\$5,000,000 over the full period of performance, yet these numbers should not be considered strict limits. Proposals aimed at the higher end of this funding range will only be accepted if they demonstrate the ability to deliver capable, innovative technologies directly to the Warfighter.

DTRA will not consider proposals for technologies based on active interrogation at this time. DTRA will not consider proposals for static portal monitors at this time. For thermal neutron detection, as well as dual neutron/gamma detection, utilization of helium-3 alternative technologies is required. Proposals based around helium-3 technology will not be evaluated.

1.4 BAA Process

This BAA will utilize a two-phase proposal process, consisting of the submission and evaluation of Phase I (White Paper packages) and Phase II (Full) proposals. While all interested parties may submit Phase I proposals, submission of Phase II proposals will be by invitation only.

The evaluation status of Phase I and Phase II proposals will be provided at two points. An email will be sent to each Offeror after completion of White Paper package evaluations. The email will either inform the Offeror that their Phase I proposal is no longer under consideration, or it will provide instructions for the submission of a Phase II proposal. In a similar manner, Offerors that submit a Phase II proposal will receive an email informing them that their proposal is either no longer under consideration or has been selected for award pending successful price negotiations.

1.5 Award Vehicle

A full range of flexible acquisition related statutory authority arrangements available to DTRA are possible results from this announcement, including but not limited to, Contracts, Task Orders, and Other Transaction Agreements (OTA). **The Government does not intend to award grants or cooperative agreements under this solicitation.** Each of these procurement instruments offers different advantages, liabilities and responsibilities for Offerors and the Government. Except for OTAs, the Government actions under this BAA shall adhere to the requirements of the FAR and Defense Federal Acquisition Regulation Supplement (DFARS).

1.5.1 Contract Type

The Government intends to award Cost and Cost-Plus-Fixed-Fee (CPFF) contracts and, when in the Government's best interest, Fixed-Price contracts. Research and development contracts are typically Cost-Reimbursement contracts (Cost, CPFF). In accordance with FAR 16.301-3(a)(3), Cost-Reimbursement contracts require that the contractor's accounting system is adequate for determining costs applicable to the contract. **Determinations of accounting system inadequacy, or lack of evidence to support a determination of accounting system adequacy, will preclude the Offeror from receiving a contract.** The Government will typically rely on the findings of a Defense Contract Audit Agency (DCAA) accounting system audit in making a determination of accounting system adequacy.

1.5.2 Limitation on OTAs

Offerors are advised that an OTA may only be awarded if it meets one of the following

criteria:

- a. There is at least one nontraditional defense contractor participating to a significant extent in the prototype project, or
- b. All significant participants in the transaction other than Federal Government are small business or non-traditional defense contractors, or
- c. At least one third of the total cost of the prototype projects is to be paid out of funds provided by parties to the transaction other than the Federal Government.
- d. The senior procurement executive for the agency determined in writing that exceptional circumstances justify the use of a transaction that provides for innovative business arrangements or structures that would not be feasible or appropriate under a contract, or would provide an opportunity to expand the defense supply base in a manner that would not be practical or feasible under a contract.

For purposes of determining whether or not a participant may be classified as a nontraditional defense contractor or small business and whether or not such participation is determined to be participating to a significant extent in the prototype project, the following definitions are applicable:

“Nontraditional defense contractor” means an entity that is not currently performing and has not performed, for at least the one-year period preceding the solicitation of sources by the DoD for the procurement or transaction, any contract or subcontract for the DoD that is subject to full coverage under the cost accounting standards prescribed pursuant to section 1502 of title 41 and the regulations implementing such section.

“Small Business” means a small business concern as defined under section 3 of the Small Business Act (Title 15, United States Code (U.S.C.), Section 632).

“Participating to a significant extent in the prototype project” means that the nontraditional defense contractor or small business is supplying a new key technology or product, is accomplishing a significant amount of the effort wherein the role played is more than a nominal or token role in the research effort, or in some other way plays a significant part in causing a material reduction in the cost or schedule of the effort or an increase in performance of the prototype in question.

NOTE: Offerors are cautioned that if they propose the use of an OTA, the Government reserves the right to negotiate either a FAR based procurement contract, or OTA as it deems is warranted under the circumstances.

1.5.3 Contract Period of Performance Limitation

DTRA intends to fund successful efforts starting in Fiscal Year 2018 (FY18) with periods of performance in the range of 1–3 years. Exceptions may be considered for projects that merit extensive test and evaluation. In accordance with FAR 17.204(e), contract periods of performance shall be limited to a maximum of five years, inclusive of all Options.

1.6 Points of Contact

E-mail address for all BAA correspondence and questions	dtra.belvoir.j9.mbx.ntd-baa-inbox@mail.mil
E-mail address for all classified annexes	ntdbaa@mail.smil.mil
BAA Announcements posted in Federal Business Opportunities, FedBizOpps	http://www.fbo.gov
DTRA Proposal Submission Website (requires registration prior to proposal submission)	http://www.dtrasubmission.net
DTRA Website	http://www.dtra.mil

1.7 Technical and Administrative Support by Non-Government Personnel

It is the intent of DTRA to use non-government personnel (e.g., contractor support personnel) in the review and administration of all submittals (Phase I and Phase II) for this BAA. Participation in the BAA requires the following DTRA Advisory and Assistance Services (A&AS) support contractor employees, contract specialist support and proposal submission website support to have access to proposal information including information that may be considered proprietary: Infinity Technology, LLC (contract specialist support); Engility Corporation (Advisory and Assistance Services), Quanterion Solutions, Inc, (DTRIAC Technical Engineering Services), Kforce Government Solutions, Inc (Accounting and Financial Systems Support) and SBG Technologies, Inc. (proposal submission website support). The contracts for provision of support personnel contain Organizational Conflict of Interest provisions and include contractual requirements for non-disclosure of proprietary contractor information. Additionally, Engility employees, including their subcontractor employees, in their role as an A&AS support contractor to DTRA will provide technical input to the Government in an advisory role as subject matter experts and provide administrative support in the management of the proposals and their technical review.

Phase I and Phase II proposals may be reviewed by additional subject matter experts (peer reviewers) from other Government agencies to include the National Nuclear Security Administration (NNSA) and the Domestic Nuclear Detection Office (DNDO), some of whom may be non-government personnel. All individuals in this category with access to proprietary data shall certify that (i) no conflict of interest exists between the individual and the offeror and any proposed subcontractor; and (ii) that they will not disclose any information pertaining to this BAA including any submittal, the identity of any submitters, or any other information relative to specific proposals.

All Offerors to this BAA consent to the disclosure of their information to the aforementioned companies, their subcontractors, and external Government agencies under these conditions.

1.8 Freedom of Information Act Disclosure

In the event that properly marked data contained in a Phase I or II proposal submitted in response to this BAA is requested pursuant to the Freedom of Information Act, 5 U.S.C. § 552, the Offeror will be advised of such request and, prior to such release of information, will be requested to expeditiously submit to DTRA a detailed listing of all information in the White Paper/proposal which the Offeror believes to be exempt from disclosure under the Act. Such action and cooperation on the part of the Offeror will ensure that any information released by DTRA pursuant to the Act is properly identified.

2.0 Eligibility

Except as specified below, this BAA is open to all responsible sources capable of responding to the Government's requirements.

2.1 Eligible Sources

Proposals submitted for this BAA will be considered from the following U.S. and Foreign Enterprises:

- Industrial/commercial concerns including small businesses.
- Accredited Degree granting colleges and universities.
- Not-for-profit organizations.
- Other non-U.S. sources.
- DoD-sponsored Federally Funded Research and Development Centers (FFRDCs) specified in DFARS 235.017-1.
- University Affiliated Research Centers (UARC's), provided that it is permitted by the UARC's DoD sponsor.
- Department of Energy (DOE) sponsored FFRDCs and National Aeronautics and Space Administration (NASA) sponsored FFRDCs, provided that authorization is obtained from the DOE sponsor or NASA sponsor.

2.2 Non-Eligible Sources

The following entities may not participate as prime contractors nor furnish principal investigators in awards made under this BAA, but may act as subcontractors:

- Federal laboratories other than those DoD, DOE and NASA sponsored FFRDCs specified above.
- U.S. Government agencies and organizations.
- Academic institutions that are federal government organizations (e.g., Naval Postgraduate School).

3.0 Instructions to Offerors

To assure timely and equitable evaluation of proposals, Offerors must follow the instructions contained herein. Offerors are required to meet all solicitation requirements, including terms and conditions, representations and certifications, technical requirements, and proposal content and format requirements. Failure to meet a requirement may result in an offer being ineligible for award. Additionally, Offerors must clearly identify any exception to the solicitation terms and conditions and provide complete accompanying rationale. It is the Offeror's responsibility to ensure the completeness of the proposal. Evaluation of a proposal will be conducted only on the basis of the information contained within it and the Government will not assume that an Offeror possesses any capabilities not specified.

Proposals shall be clear, concise, and include sufficient detail for effective evaluation and for substantiating the validity of stated claims. The Offeror shall assume that the Government has no prior knowledge of the Offeror's capabilities.

3.1 Administrative Requirements

3.1.1 Registration to the DTRA Proposal Submission Website

All Offerors are required to register at the DTRA proposal submission website prior to submission of Phase I proposals. Detailed registration and submission instructions are available at the site.

The registration must be submitted by a central Business Point of Contact (BPOC) rather than individual Principal Investigator personnel. A BPOC is a person who is given the responsibility of coordinating all submissions from individual Principal Investigators at his or her work location and is the only individual who may access the DTRA proposal submission website. The intent is that all submissions from an organization be coordinated and submitted by a single, identified responsible party. Failure to register in accordance with instructions may render them ineligible for this BAA.

Offerors must be aware that it is their responsibility to ensure that e-mail notifications reach the designated BPOC and that e-mail notifications are not blocked due to the use of 'spam blocker' software or other means that the recipient's Internet Service Provider may have implemented to block the receipt of certain e-mail messages. Additionally, it is the responsibility of the BPOC to inform DTRA of any updates to e-mail addresses for both themselves and the designated Principal Investigator.

IMPORTANT: Registration at the DTRA proposal submission website is NOT the same as registering at the System for Award Management or FedBizOpps websites. Failure to register at the DTRA proposal submission website will prevent an Offeror's submission of documents required and thus render the Offeror ineligible for participation in this BAA.

3.1.2 Registration to the System for Award Management (SAM) Website

DTRA requires that all Offerors be registered in the SAM database at the time of Phase I proposal submission. Contractors must keep their registration current for the life of the

contract. Offerors may register with SAM online at <http://www.sam.gov>. Offerors will NOT be able to complete their SAM registration until SAM has confirmed the Offeror's Employer Identification Number (EIN) or Taxpayer Identification Number (TIN) with the Internal Revenue Service (IRS).

NOTE: It will take 24-48 hours for the IRS to validate the TIN. According to the IRS, if Offerors do not currently have an EIN and need to apply for one over the phone or Internet, they will be given a tentative EIN, but the EIN may not become active for up to two weeks. Questions regarding an EIN may be directed to 1-800-829-4933.

3.2 Questions about this BAA

Questions regarding the technical and administrative content of this BAA must be sent to the following DTRA e-mail address: dtra.belvoir.J9.mbx.ntd-baa-inbox@mail.mil.

Questions and/or inquiries that are not submitted to the aforementioned e-mail address will be disregarded. Questions must be submitted before the deadline for questions listed in Section 6.0. Questions received after this deadline may not be answered. All questions must include the BAA number in the subject line. DTRA will post answers to questions on the FedBizOpps website. It is the Offeror's responsibility to periodically check the FedBizOpps website to view postings of questions and answers, in addition to any applicable amendments to the BAA.

3.3 Proposal Submission Instructions

3.3.1 General Instructions

All proposals must be submitted electronically through the DTRA proposal submission website: <http://www.dtrasubmission.net>. Proposals submitted by any means other than the DTRA proposal submission website (e.g., hand-carried, postal service, commercial carrier, e-mail) **will not** be considered.

Offerors are responsible for ensuring submission of their Phase I and Phase II proposals by the date and time specified in Section 6.0. **Time management is wholly the responsibility of the Offeror. If a timely submission is not fully uploaded prior to the cutoff date/time, the proposal will not be considered. No exceptions will be made.** The Offeror must verify the submission of their proposal package by printing the electronic receipt (time and date stamped) that appears on the final screen following compliant submission of a proposal to the DTRA proposal submission website.

Using the DTRA proposal submission website, all Offerors must prepare Proposal Cover Sheets for each Phase I and invited Phase II proposal submitted. All data point requirements must be completed in every cover sheet. Once the cover sheet is saved, the system will assign a unique proposal number for each Phase I submission and a different unique proposal number for each invited Phase II submission. Cover sheets may be edited as often as necessary until the submission period closes. All submissions must be dated and **unclassified**. An exception is allowed in circumstances where the separate submission of classified information is necessary to convey a full description of the

proposed work. In such cases relevant classified information may be submitted in the form of a classified annex as described in Section 3.4.3.1.1.

If an Offeror submits multiple proposals, separate cover sheets must be generated for each proposal and the full proposal files must be uploaded with the associated cover sheet, since a unique document number will automatically be assigned to each submission by the electronic proposal tracking system. All documents submitted to the DTRA proposal submission website are considered works in progress and are not eligible for evaluation until the Offeror submits the final proposal package for consideration. Once all proposal files have been uploaded and the Offeror is ready to submit their application, select the green "Submit" button on the page. A confirmation message will appear on the page once the submission has gone through. Perform a virus check before uploading any proposal files. If a virus is detected, it may cause rejection of the file.

Offerors **must** submit proposals to the appropriate Topic. Failure to do so will render the proposal ineligible for evaluation and award.

3.3.2 Late Submissions and Withdrawal of Proposals

Offerors are responsible for access to the DTRA proposal submission website and for submitting electronic proposals so as to be received at the Government site indicated in this BAA no later than the closing date and time stated in Sections 1.2 and 6.0. Untimely proposals will not be considered.

When sending electronic files, the Offeror will account for potential delays in file transfer from the originator's computer server to the Government website/computer server. Offerors are encouraged to submit their proposals early to avoid potential file transfer delays due to high demand or problems encountered in the course of the submission. Offerors should also print, and maintain for their records, the electronic date/time stamped receipt that appears on the final screen following submission of a proposal on the DTRA proposal submission website. All submissions shall be fully uploaded before the cut off time/date in order to be considered.

Proposals may be withdrawn by written notice received at any time before award. Withdrawals are effective upon receipt of notice via the e-mail address listed in Section 1.6.

3.4 Proposal Format Requirements

3.4.1 Submission File Format

Offerors shall submit each required proposal volume as a separate Portable Document File (PDF) compatible with Adobe Acrobat ® version 11.0.0 or earlier. Additionally, each Phase II proposal shall also contain a Statement of Work (SOW) provided in Microsoft (MS) Word format and a Cost Spreadsheet provided in MS Excel format. Additional specific format requirements are provided below.

Movie and sound file attachments, or other additional files, will not be accepted. The proposal files must not be encrypted. File size must not exceed 10 MB.

3.4.2 Phase I Proposal

Offerors must submit Phase I proposals in accordance with instructions provided in this section of the BAA; failure to do so may preclude consideration for Phase II proposal invite. Additionally, Offerors are required to complete a cover sheet using the DTRA proposal submission website. All Phase I proposals shall consist of a Quad Chart and White Paper conforming to the following format requirements:

3.4.2.1 Quad Chart

- Paper size: 8.5 x 11 inches, Landscape orientation
- Font: Arial, 28 point bold for Header, 10 point for body
- Page Limit: No more than one (1) page. Pages in excess of the page limitation will not be read or evaluated.
- Format: MS PowerPoint
- Classification: Unclassified
- Restrictive Markings: The Quad Chart must not contain information deemed trade secret, confidential or proprietary by the Offeror.

3.4.2.2 White Paper

- Paper size: 8.5 x 11 inches
- Spacing: Single-spaced
- Margins: One-inch
- Font: Times New Roman, not smaller than 12 point
- Page Limit: No more than three (3) pages. Pages in excess of the page limitation will not be read or evaluated.
- Classification: Unclassified
- Restrictive Markings: White Papers containing proprietary information shall contain the restrictive markings reflected in Section 3.4.4.

3.4.3 Phase II Proposal

Offerors invited to submit a Phase II proposal must follow the instructions provided in this section of the BAA; failure to do so may preclude consideration of the proposal for award. All Phase II proposals shall consist of a Technical Volume, Cost Volume, and Supplement Information Volume conforming to the following format requirements:

3.4.3.1 Technical Volume

The Technical Volume shall consist of the Offeror's Technical Proposal, Technical Approach, Basis of Estimate (BOE), and SOW conforming to the following format requirements:

3.4.3.1.1 Technical Proposal

- Paper size: 8.5 x 11 inches
- Spacing: Single-spaced
- Margins: One-inch
- Font: Times New Roman, not smaller than 12 point
- Page Limit: No more than twenty five (25) pages (total includes classified annex, if applicable). Pages in excess of the page limitation will not be read or evaluated.
- Classification: Unclassified
- Restrictive Markings: Documents containing proprietary information shall contain the restrictive markings reflected in Section 3.4.4.
- Classified Annexes, if applicable:
 - Limited to two pages or less
 - Must contain same formatting requirements as Technical Proposal
 - Counts toward total Technical Proposal page limit of 25 pages
 - Shall be referenced in the unclassified proposal, as applicable
 - All markings shall be in accordance with DoDM 5200.01
 - Annexes shall not be higher than SECRET and contain no other caveats
 - Annexes must be referenced to the Phase II proposal using the proposal number in both the document and email subject line
 - Annexes **MUST** be received no later than the Phase II submission deadline

3.4.3.1.2 Technical Approach and BOE

- Paper size: 8.5 x 11 inches
- Spacing: Single-spaced
- Margins: One-inch
- Font: Times New Roman, not smaller than 12 point
- Page Limit: None
- Classification: Unclassified
- Restrictive Markings: Documents containing proprietary information shall contain the restrictive markings reflected in Section 3.4.4.

3.4.3.1.3 Statement of Work

- Paper size: 8.5 x 11 inches
- Spacing: Single-spaced
- Margins: One-inch
- Font: Times New Roman, not smaller than 12 point
- Page Limit: None; typically 3-5 pages
- Classification: Unclassified

- Restrictive Markings: The SOW must not contain information deemed trade secret, confidential or proprietary by the Offeror nor Contractor-specific references such as headers and footers with company name and/or logo. See Attachment 2 for more information.

3.4.3.2 Cost Volume

The Cost Volume shall consist of the Offeror's Cost Narrative / Supporting Documentation, Cost Spreadsheets, which shall conform to the following format requirements:

3.4.3.2.1 Cost Narrative / Supporting Documentation

- Paper size: 8.5 x 11 inches
- Spacing: Single-spaced
- Margins: One-inch
- Font: Times New Roman, not smaller than 12 point
- Page Limit: None
- Classification: Unclassified
- Restrictive Markings: Documents containing proprietary information shall contain the restrictive markings reflected in Section 3.4.4.

3.4.3.2.2 Cost Spreadsheets

- File Format: MS Excel 2010, or compatible format
- Format: In accordance with Attachment 4
- Formulas: All formulas shall be preserved.
- Page Limit: None
- Classification: Unclassified
- Restrictive Markings: Documents containing proprietary information shall contain the restrictive markings reflected in Section 3.4.4.

3.4.3.3 Supplemental Information Volume

The Supplemental Information Volume shall conform to the following format requirements:

- Paper size: 8.5 x 11 inches
- Spacing: Single-spaced
- Margins: One-inch
- Font: Times New Roman, not smaller than 12 point
- Page Limit: None
- Classification: Unclassified
- Restrictive Markings: Documents containing proprietary information shall contain the restrictive markings reflected in Section 3.4.4.

3.4.4 Restrictive Markings and Disclosure of Proprietary Information

The White Paper portion of the Phase I submission and all Phase II volumes submitted in response to this solicitation (with the exception of the SOW) may contain technical information and other data that the Offeror does not want disclosed to the public or used by the Government for any purpose other than proposal evaluation. Public release of information in any submission will be subject to existing statutory and regulatory requirements. If proprietary information which constitutes a trade secret, proprietary commercial or financial information, confidential personal information, or data affecting national security is provided by an Offeror, it will be treated in confidence, to the extent permitted by law, provided that the following legend appears and is completed on the front of the submission:

“For any purpose other than to evaluate the White Paper/proposal, this data shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed in whole or in part, provided that, if an award is made to the Offeror as a result of or in connection with the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the agreement. This restriction does not limit the right of the Government to use information contained in the data if it is obtained from another source without restriction. The data subject to this restriction is contained in page(s) ___ of this White Paper/proposal.”

Any other legend may be unacceptable to the Government and may constitute grounds for removing the proposal from further consideration without assuming any liability for inadvertent disclosure. The Government will limit dissemination of properly marked information to official channels.

In addition, the pages indicated as restricted must be marked with the following legend: “Use or disclosure of the White Paper/proposal data on lines identified by an asterisk (*) are subject to the restriction on the front page of this White Paper/proposal.” The Government assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose.”

In the event that properly marked data contained in a White Paper/proposal submitted in response to this BAA is requested pursuant to the Freedom of Information Act, 5 U.S.C. § 552, the Offeror will be advised of such request and, prior to such release of information, will be requested to expeditiously submit to DTRA a detailed listing of all information in the White Paper/proposal which the Offeror believes to be exempt from disclosure under the Act. Such action and cooperation on the part of the Offeror will ensure that any information released by DTRA pursuant to the Act is properly identified.

By submission of a White Paper/proposal, the Offeror understands that proprietary information may be disclosed outside the Government for the sole purpose of technical evaluation. The Contracts Office will obtain a written agreement from the evaluator that proprietary information in the White Paper/proposal will only be used for evaluation purposes and will not be further disclosed or utilized.

3.5 Proposal Content Requirements

3.5.1 Phase I Proposal

Offerors must submit Phase I proposals in accordance with instructions provided in this section of the BAA; failure to do so may preclude consideration for Phase II proposal invite. All Phase I proposals shall consist of a Quad Chart and a White Paper conforming to the following requirements:

3.5.1.1 Quad Chart

The Quad Chart must be included in the Phase I proposal as well as in Volume III, Supplemental Information, of the Phase II proposal. Proposed Quad Charts must conform to the following template:

Heading:

- Title of Project
- Topic Number
- Principal Investigator
- Organization

Upper Left Quadrant:

- Objective – provide a clear and concise description of the goal of the effort.
- Description of Effort – provide a brief description of the technology proposed for investigation and the methodologies to be used during the course of investigation.

Lower Left Quadrant:

- Benefits of Proposed Technology – provide a brief description of the net advantages of the proposed technology over current practices and other competing technologies.
- Challenges: provide a bullet list of the technical or scientific challenges being addressed.
- Maturity – describe the maturity of proposed technology with respect to Technical Readiness Level (TRL) at project start and the anticipated TRL at project end. See Attachment 1 for TRL definitions.

Upper Right Quadrant:

- Picture or graphic illustrating proposed technology development

Lower Right Quadrant:

- Period of Performance – provide the project period of performance. If the project incorporates multiple periods of performance, separated by logical and meaningful

- milestones and go/no-go decision points, provide the duration of each period.
- Major goals/milestones and deliverables - provide a bullet list of the major project goals, milestones and deliverables. If utilizing multiple project periods of performance, provide the goals, milestones and deliverables for each period and for the overall project.
- Cost – provide a Rough Order of Magnitude (ROM) cost estimate. If utilizing multiple project periods of performance, provide the ROM estimates for each period and for the overall project.

3.5.1.2 White Paper

The White Paper shall include the following sections in the order given below. Information shall be consistent with and expand upon details provided in the Quad Chart:

(1) Describe the following elements of the project technical approach.

- Project objectives, scope, and description of the proposed effort.
- Provide sufficient information on the research being proposed (e.g., the hypothesis, theories, concepts, approaches, data measurements, and analysis, etc.).
- Major Goals/Milestones by fiscal year.
- Overview of tasks and methods planned to achieve each objective and the final deliverable and/or project end-state.
- Key personnel. Offerors are cautioned to limit discussion to the minimum necessary to establish that the Offeror possesses sufficient technical expertise to successfully execute the technical approach.
- Facilities/Equipment necessary to carry out the proposed effort.

(2) Provide a project overview describing:

- How the technology can be implemented or utilized by DoD end-users, and the impact of the technology on end-user mission capability.
- The current TRL of the technology and the anticipated TRL at the end of the proposed project.
- Any applicable technical and/or scientific challenges associated with the proposed project, and how the Offeror intends to address these challenges.

(3) Describe how the proposed project is achievable within the proposed schedule. Discuss potential risks and their proposed mitigation.

(4) Describe the estimated costs for the proposed technical approach for each project period of performance.

3.5.2 Phase II Proposal

Offerors invited to submit a Phase II proposal must follow the instructions provided in this section of the BAA; failure to do so may preclude consideration of the proposal for award. All Phase II proposals shall consist of a Technical Volume, Cost Volume and Supplemental Information Volume conforming to the following requirements:

3.5.2.1 Technical Volume

The Technical Volume shall be comprised of a Technical Proposal, Technical Approach and BOE, and SOW which conforms to the following requirements:

3.5.2.1.1 Technical Proposal

The Technical Proposal shall be submitted in accordance with the following:

3.5.2.1.1.1 Abstract

Offerors shall provide a brief abstract.

3.5.2.1.1.2 Scope

Offerors shall provide a detailed description of project scope, to include project objectives, background, programmatic and relevance. 8 pages are suggested.

- A. Objective. Offerors shall state clearly and concisely the objective of the proposed project.
- B. Background. Offerors shall provide the necessary technical and scientific background to support the scientific and/or technical merit of the proposed project.
- C. Programmatic. Offerors shall describe their organization's program management plan for the proposed project. Offeror's shall list supporting and collaborating centers, and roles and responsibilities of each identified academic and/or industrial subcontractor supporting this project.
- D. Relevance. Offerors shall describe the relevance of the proposed project in terms of DTRA mission, end-user needs and the state-of-the-art of the proposed technology.

3.5.2.1.1.3 Credentials

Offerors shall provide credentials and qualifications (of all persons that will be involved with the proposed effort), limited to those which are directly relevant to the proposed work.

- A. Summary of Organizational Credentials and Qualifications. Offerors shall describe their organizational qualifications and credentials to perform the proposed project.
- B. Summary of Qualifications for PI and Key Personnel. Offerors shall list summary qualifications for the proposed Principal Investigator and other Key Personnel.
- C. Summary of Facilities to Perform the Proposed Work. Offerors shall summarize the credentials of the primary performing center, and supporting academic and industrial subcontractors to perform the work. Offerors shall describe specific examples of similar work performed, and equipment and/or facilities available to perform the proposed work.

3.5.2.1.1.4 Performance Schedule and Expenditure Plan

- A. Gantt Chart. Offerors shall provide a Gantt chart that lists each individual SOW task and provides the duration of performance for each.
- B. Time-phased Expenditure Plan. Offerors shall provide a time-phased expenditure plan, provided in chart format that provides estimated cost accrual by month, by project period. For example, if the proposed project includes three periods of performance, each lasting twelve months, the Offeror's chart will be broken out into three separate twelve-month periods.

3.5.2.1.1.5 References

Offerors shall list any relevant documents used to develop the technical approach.

3.5.2.1.2 Technical Approach and BOE

- A. General. The Offeror shall address the following requirements:
 - 1. Provide a detailed narrative summary of the proposed technical approach.
 - 2. Provide project milestones and objectives. Explain why the proposed technical approach is valid and suitable to achieve SOW requirements, project milestones and objectives.
- B. Risks. The Offeror shall address the following requirements:
 - 1. Explain the risks associated with achieving proposed project goals, objectives and milestones (what will be done), and risks associated with the technical approach (how it will be done).

2. For all identified risks, Offerors shall indicate how they plan to manage these risks (e.g., avoidance, acceptance, mitigation, transfer) and provide a detailed narrative explaining the corresponding risk management actions that will be taken for each identified risk.
- C. Approach and BOE. For **each proposed SOW task**, Offerors shall address the following:
1. Technical Approach: The proposed technical approach to execute the individual SOW task.
 2. Milestones, Metrics, Objectives and Deliverables: The milestones, metrics, objectives and deliverables associated with the individual SoW task.
 3. Basis of Estimate: The proposed resources to execute the technical approach, covering all cost elements in accordance with the below information and format requirements. No cost information shall be provided with the technical approach and BOE. Cost data is limited to the Cost Volume only. Address each of the following requirements.
 - a) Direct Labor
 - i. Direct Labor Breakout – provide a chart that lists each individual labor category assigned to this task and the number of hours allocated to each listed labor category.
 - ii. Direct Labor Justification – Offerors shall explain, in detail, how the estimate was developed (e.g., bottom-up analysis, analogy), the rationale supporting the chosen estimating technique, and why each proposed labor category, and the hours allocated to each labor category, is reasonable and necessary to execute the technical approach
 - b) Subcontracts
 - i. Subcontract Breakout – provide a chart that lists each individual subcontractor assigned to this task.
 - ii. Subcontractor Justification – Offerors shall explain, in detail, why each proposed subcontractor is appropriate and necessary to execute the technical approach.
 - c) Consultants

i. Consultant Breakout – provide a chart that lists each individual consultant assigned to this task and the number of hours allocated to each consultant.

ii. Consultant Justification – Offerors shall explain, in detail, why each proposed consultant, and associated level of effort/hours, is appropriate and necessary to execute the technical approach.

d) Materials/Supplies

i. Material/Supplies Breakout – provide a chart that lists each individual material and supply item assigned to this task and the quantity for each.

ii. Material/Supplies Justification – Offerors shall explain, in detail, how the estimate was developed (e.g., bottom-up analysis, analogy), the rationale supporting the chosen estimating technique, and why each proposed material and supply item is appropriate and necessary to execute the technical approach.

e) Equipment

i. Equipment Breakout – provide a chart that lists each individual equipment item assigned to this task and the quantity for each.

ii. Equipment Justification – Offerors shall explain, in detail, how the estimate was developed (e.g., bottom-up analysis, analogy), the rationale supporting the chosen estimating technique, and why each proposed equipment item is appropriate and necessary to execute the technical approach.

f) Travel

i. Travel Breakout – provide a chart that lists each individual travel event, and for each individual travel event, lists the following: a) reason for travel, b) destination, c) number of travelers, d) applicable labor categories, and e) duration of travel.

ii. Travel Justification – Offerors shall explain, in detail why each proposed travel event, and the proposed travelers (by labor category) are appropriate and necessary to execute the technical approach.

g) Other Direct Costs (ODC)

- i. ODC Breakout – provide a chart that lists each individual ODC item assigned to this task and the quantity for each.
- ii. ODC Justification – Offerors shall explain, in detail, how the estimate was developed (e.g., bottom-up analysis, analogy), the rationale supporting the chosen estimating technique, and why each proposed ODC item is appropriate and necessary to execute the technical approach.

The technical approach and BOE MUST clearly and accurately reflect the proposed SOW. Offerors must complete the above for each proposed project period of performance (e.g., Base Period, Option Period 1, etc.). Each proposed subcontractor must also provide a technical basis of estimate addressing each of the above requirements.

3.5.2.1.3 SOW

The SOW shall be submitted in accordance with the sample template provided in Attachment 2.

3.5.2.2 Cost Volume

All proposals are subject to the requirements of the Truth in Negotiations Act (TINA). A proposal tentatively selected for award exceeding the threshold listed in FAR 15.403-4(a)(1) will be required to submit a certificate of current cost and pricing data in the format described in FAR 15.406-2 upon conclusion of successful negotiations.

The responsibility for providing adequate supporting data and attachments lies solely with the Offeror. The cost proposal must include cost estimates sufficiently detailed for meaningful evaluation. Further, the Offeror must also bear the burden of proof in establishing reasonableness of proposed costs; therefore, it is in the Offeror's best interest to submit a fully supportable and well-prepared cost proposal. The basis and rationale for all proposed costs should be provided in the cost narrative so that Government personnel can place reliance on the information as current, complete, and accurate.

The Cost Volume shall contain the following content:

3.5.2.2.1 Cost Spreadsheet

The Offeror shall prepare the Cost Spreadsheet utilizing Attachment 4 – Cost Spreadsheet. The Cost Spreadsheet is in Microsoft Excel format. Offerors shall follow all instructions, including provided Notes, contained within the Cost Spreadsheet.

3.5.2.2.2 Cost Narrative/Supporting Documentation

All Offerors shall provide documentation, and analysis as required, to support the proposed costs contained within Attachment 4. Specific information requirements for this section are included in the Attachment 4 Notes.

3.5.2.3 Supplemental Information Volume

The Supplemental Information Volume shall be submitted in accordance with the content requirements provided in Section 8.1.

4.0 Evaluation Criteria

4.1 General Evaluation Information

Evaluation of proposals will be conducted based upon a technical subject matter expert review as described in FAR Subparts 6.102(d)(2) and 35.016. Each proposal will be evaluated based on the merit and relevance of the specific proposal as it relates to the DTRA program rather than against other proposals for research in the same topic area. All documents necessary for the review and evaluation of the Phase I and Phase II proposal submissions must be provided as described in Section 3 of this BAA.

4.2 Adjectival Ratings

With the exception of Phase II Factor 4 – Cost Realism, the Government will evaluate proposals using the adjectival ratings below. Phase II Factor 4 – Cost Realism will be assigned a rating of either Realistic or Not Realistic. Offerors are advised that a strength is an aspect of a proposal that has merit or exceeds specified performance or capability requirement in a way that will be advantageous to the Government during contract performance. A weakness means a flaw in the proposal that increases the risk of unsuccessful contract performance. A deficiency is a material failure of a proposal to meet a Government requirement or a combination of significant weaknesses in a proposal that increases the risk of unsuccessful contract performance to an unacceptable level.

Rating	Description
Outstanding (O)	The proposal is a technically exceptional submission pertinent to program goals and objectives. The proposal contains multiple strengths, exceptional features or innovations that should substantially benefit the program. The risk of unsuccessful performance usually is low.
Good (G)	The proposal is a technically thorough submission pertinent to program goals, and objectives. The proposal contains at least one strength which indicates the proposed approach will benefit the program. Weaknesses, if any, are more than offset by strengths. The risk of unsuccessful performance usually is low to moderate. The proposal may be recommended for acceptance but are at a lower priority than submissions rated 'Outstanding'.
Acceptable (A)	The proposal is a technically adequate submission pertinent to program goals, and objectives. Strengths and weaknesses are offsetting or will have little or no impact on contract performance. The risk of unsuccessful performance usually is no worse than moderate. The proposal may be recommended for acceptance but is at a lower priority than submissions rated either 'Outstanding' or 'Good'.

Marginal (M)	The proposal is a technically weak submission pertinent to program goals, and objectives. The proposal has one or more weaknesses which are not offset by strengths. The risk of unsuccessful performance is high. The proposal may be recommended for acceptance but is at a lower priority than submissions rated 'Outstanding', 'Good' or 'Acceptable'.
Unacceptable (U)	The proposal is not pertinent to program goals and objectives and contains one or more deficiencies. The proposal is unawardable.

4.3 Phase I Proposal

The evaluation of Phase I proposals will be based on the two factors listed below. Each factor will be assigned one of the following adjectival ratings: Outstanding (O), Good (G), Acceptable (A), Marginal (M) or Unacceptable (U). Any factor scored as Unacceptable (U) will render the Offeror's proposal unawardable, and the proposal will not be considered further.

Phase I Quad Charts/White Papers will be evaluated against the factors listed below. The evaluation factors are listed in order of decreasing importance.

4.3.1 Factor 1 – Scientific and Technical Merit

The objective of this factor is to assess the extent to which the Offeror has an innovative, unique, high payoff, and comprehensive technical approach based on sound scientific principles. Offerors must demonstrate that their approach is innovative, unique, and responsive to the topic as presented in this solicitation; that the technical approach is sound; that they have an understanding of critical technical issues and risk and that they have a plan to reasonably mitigate those risks where possible. Significant improvements in relevant technology capabilities above the 'state-of-the-art' are sought.

4.3.2 Factor 2 – Value to Mission Goals

The objective of this criterion is to assess the extent to which the Offeror's proposal provides a rapid path of application of the technology to the DoD. Offerors must demonstrate a clear knowledge of desired military capabilities and indicate the manner in which the technology will transition. Proposals must demonstrate how the proposed research supports the program goals and responds to the specific topic areas. Offerors must demonstrate that the new technology can be implemented or utilized by end-users as a means to improve their operational capabilities.

4.4 Phase II Proposal

The evaluation of Phase II proposals will be based on the four factors listed below. Factors 1 through 3 each will be assigned one of the following adjectival ratings: Outstanding (O), Good (G), Acceptable (A), Marginal (M) or Unacceptable (U). Factor 4 will be assigned a rating of Realistic or Not Realistic. Any factor scored as Unacceptable or Not Realistic will render the Offeror's proposal unawardable, and the proposal will not be considered further.

Phase II evaluation factors to be used to evaluate and select full proposals are listed below in decreasing order of importance. Additionally, pursuant to FAR 35.016(e), fund availability

shall be a consideration during evaluation.

4.4.1 Factor 1 – Scientific and Technical Merit

The objective of this factor is to assess the extent to which the Offeror has an innovative, unique, high payoff, and comprehensive technical approach based on sound scientific principles. Offerors must demonstrate that their approach is innovative, unique and responsive to the topic as presented in this solicitation; that the technical approach is sound; that they have an understanding of critical technical issues and risks and that they have a plan for mitigation of those risks. Significant improvements in relevant technology capabilities above the ‘state-of-the-art’ are sought.

4.4.2 Factor 2 – Value to Mission Goals

The objective of this criterion is to assess the extent to which the Offeror’s proposal provides a rapid path of application of the technology to the DoD. Offerors must demonstrate a clear knowledge of desired military capabilities and indicate the manner in which the technology will transition. Proposals must demonstrate how the proposed research supports the program goals and responds to the specific topic areas. Offerors must demonstrate that the new technology can be implemented or utilized by end-users as a means to improve their operational capabilities.

4.4.3 Factor 3 – Capability of the Personnel and Facilities to Perform the Proposed Effort

The objective of this factor is to assess the extent to which the Offeror’s team has the requisite expertise, skills and resources necessary to perform the proposed program. This includes an assessment of the team’s management construct, key personnel, facilities and past technical experience in conducting similar efforts of the proposed scope. Offerors must demonstrate that their team has the necessary background and experience to perform this project. Facilities should be detailed with discussion of any unique capabilities pertinent to the research. Subcontractors may include Government facilities or agencies; however the unique expertise or specialized facilities provided through their inclusion must be clearly presented.

4.4.4 Factor 4 – Cost Realism

This objective of this factor is to establish that the proposed costs are reasonable and realistic for the technical approach offered and to assess the Offeror's practical understanding of the scope of the proposed effort. Proposals also will be evaluated for cost justification in relation to the scope of the proposed effort.

4.5 Basis for Selection Decision

Phase II proposal invitations will be extended to, and contract awards will be made to, the best proposals that are determined to be most beneficial to the Government with appropriate consideration given to the evaluation factors, order of importance, and selection preferences. Other factors that may be considered include duplication with other research, program

balance across research topics, and budget limitations. The Government may also evaluate the impact of any asserted data/software restrictions or patents during the selection and/or negotiation process, and may request additional information from the Offeror, as may be necessary, to evaluate the Offeror's assertions. Proposals may be selected for funding which are not rated as highly as others and which may be of higher risk and higher cost. Multiple awards are anticipated. The Government reserves the right to select for negotiation all, some, one, or none of the proposals received in response to this BAA. The Government reserves the right to make awards without opening discussions with Offerors. The Government also reserves the right to conduct discussions if determined necessary.

Additionally, the Government reserves the right to perform responsibility checks which includes a review of past performance and may also factor into the determination for award. Sources for past performance review may include Past Performance Information Retrieval System (PPIRS), New Federal Awardee Performance and Integrity Information System (FAPIIS), and Government sources such as Defense Advanced Research and Projects Agency (DARPA) and Army Research Office (ARO). Government program managers and contracting officers who are familiar with the Offeror's relevant past performance may also be contacted.

4.6 Notification to Offerors

Selection and non-selection notifications will be sent via e-mail to Offerors - specifically, the registered BPOC and the designated Principal Investigator as entered on the DTRA proposal submission website. The e-mail will be sent from the DTRA proposal submission website on or about the date specified in Section 6.0. Additionally, notification of apparent successful Offerors will be posted to <http://www.fbo.gov/> on or about the date specified in Section 6.0.

4.7 Debriefing

The Government will provide written debriefings to Offerors if a request is submitted and received within three working days of Phase II proposal non-selection notifications. Debriefings will not be provided for Phase I proposal submissions.

4.8 Other Considerations

4.8.1 Negotiations

Phase II proposals selected for award will be subject to negotiations, which will include costs and price and may include technical scope. Additionally, the Government may elect to fund only part of a submitted proposal and may incrementally fund any or all awards under this BAA. The Procuring Contracting Officer (PCO) will have the ultimate authority and responsibility to make final scope determinations for selections of proposals that will not be totally funded to ensure the portion selected meets the solicited requirements and does not represent a substantial change to the original scope of work proposed.

During the course of negotiations, Offerors whose proposals are selected for potential award will be contacted to provide additional information required to facilitate the negotiation process and to allow for award. Offerors that are not responsive to Government requests for information in a timely manner, defined as meeting government deadlines established and communicated with the request, may be removed from award consideration. Offerors may also be removed from award consideration if the Offeror and the Government fail to negotiate mutually agreeable terms within a reasonable period of time.

4.8.2 Reserve List of Selected Proposals Subject to Availability of Funds

The Government reserves the right to create and maintain a reserve list of proposals for potential funding, in the event that sufficient funding becomes available. The reserve list will remain active and available for funding for up to 12 months after the date of selection. All awards are subject to the availability of funds.

4.8.3 Responsibility Determination

The PCO shall make a final determination on selectees' responsibility and responsiveness to BAA terms and conditions. Any of these determinations may render an impending proposal or selectee ineligible for contract award.

5.0 Contract Data Requirements List (CDRL)

Resultant contracts will contain specific deliverable requirements contained within DD Form 1423. The CDRL lists those data deliverables that are required, under the terms of the contract, to be delivered to the Government in accordance with the information in the CDRL and the contract itself. The CDRL will identify the necessary information needed by the contractor to deliver acceptable data items to the Government. This includes a description of the data item, any acceptance criteria, the format of the deliverable, and any delivery information.

While project requirements will determine the deliverables that apply, all resultant contracts will contain the following minimum set of deliverable requirements:

- Monthly Status Reports
- Contractor Work Breakdown Structure
- Integrated Master Schedule
- Research Management Plan (RMP) for New and/or Modified Efforts w/in Program
- Program Reviews and Technical Interchange Meetings
- Test Plan
- Test Results
- Final Report
- Patents - Reporting of Subject Inventions

Final CDRL requirements will be negotiated prior to contract award.

6.0 Estimated Milestones

MILESTONE SCHEDULE	DATE
BAA Posted to FBO	2 March 2017
Begin registration at the DTRA proposal submission website	2 March 2017
DTRA proposal submission website opens for receipt of Quad Chart/White Paper	2 March 2017
Deadline to submit questions	13 March 2017, no later than 2 p.m. EST
Questions and Answers posted at FBO	20 March 2017
Phase I Proposal receipt deadline	5 April 2017, no later than 2 p.m. EDT
Phase II Proposals invited	18 May 2017
Phase II Proposal receipt deadline	26 June 2017, no later than 2 p.m. EDT
Announcement of Apparent Successful Phase II Offerors; non-selection notifications will follow within two weeks (“on or about” is used since this is an estimate)	14 August 2017
Estimated First Award Date (“on or about” is used since this is an estimate)	14 January 2018 ^{1, 2}

Notes:

1: Actual award dates will vary based on complexity, statutory requirements, quality of proposal, pricing considerations, DCAA audits of proposed rates, type of instrument, number of awards, and other considerations. All dates are subject to change.

2: Awards will be made subject to the availability of funds.

7.0 Topic Requirements

Proposals that combine Basic Research with Applied Research, Applied Research, and/or Advanced Technology Development as specified in each topic will be accepted and considered. This BAA will not consider Advanced Component Development and Prototypes under Section 819 of Public Law 111-84. However, Offerors may propose efforts necessary to evaluate integrated advanced development to expedite technology transition from the laboratory to operational use under a final option and limited to a period of one year while a new competitive effort can be awarded.

7.1 List of Topics

DTRA is interested in soliciting proposals in the following topic areas. These topics are intended to identify technologies that fill capability needs related to nuclear detection, monitoring, and verification technologies. The level of detail provided for each specific technology area and sub-area or order in which they appear is not intended to convey any information regarding relative priority.

This BAA is limited to projects that meet Technology Readiness Level (TRL) definitions in the TRL range 3-6. Upon completion of proposed development efforts, Offeror's technology should strive to meet a TRL in the range of 4-6. Proposals that address technologies at TRL 4 or greater should also be aware of the Manufacturing Readiness Level (MRL) considerations.

TOPIC: NT-18-DET-01

ENHANCED WIDE-AREA MEASUREMENT CAPABILITY THROUGH MULTI-DIMENSIONAL SENSING AND DATA FUSION

DTRA seeks novel approaches for effective wide-area nuclear threat detection and characterization missions. Such approaches must involve a combination of direct radiation detection with other orthogonal detection modalities. Proposals should focus on development of potentially autonomous hardware and software to map and quantitatively assess radiological and nuclear environments with enhanced sensitivity and localization capability. Such environments may include radiological/nuclear sources distributed over a broad area (< 5 km²), a post-blast battlefield (< 10 km²), a large, contaminated, multi-level building, or the site of a major nuclear disaster such as Fukushima Daiichi.

New capabilities should not rely solely on traditional radiation sensing technologies, but also utilize orthogonal sensing and data fusion technologies. Examples of interest include contextual sensors that provide information about the local environment and inform threat detection algorithms, such as lidar, radar, and/or visual sensors. In comparison with existing radiation detection technologies, the desired solutions should demonstrate significant improvements in detection limits and/or achieve an order of magnitude reduction in time-to-detect/map distributed sources in the aforementioned complex environments.

DTRA will not consider proposals involving design or development of unmanned vehicles. Any proposals aimed at development of sensors for unmanned vehicles must be based on integration with commercial off-the-shelf or government off-the-shelf unmanned vehicle technologies. Solutions must clearly demonstrate potential for military utility.

TOPIC: NT-18-DET-02

ENABLING TECHNOLOGIES FOR NUCLEAR DETECTION

DTRA seeks innovative research and development on component-level radiation detection technologies. Acceptable solutions must demonstrate significant improvements in detector capability, performance, and/or military utility. Examples of interest include novel solid-state photodetectors, low-power (<10 mW) signal-processing electronics, flexible detection media, search algorithms, and isotope identification algorithms. Exploratory detector materials research will not be considered.

Solutions should be suitable for applications in wearables, unattended sensors, radiation imagers, or diagnostics tools. Proposals must demonstrate the Offeror's ability to integrate, test, and evaluate the proposed enabling technology in a system-level prototype during the period of performance.

TOPIC: NT-18-DET-03***WIDE-AREA SEARCH***

DTRA seeks the capability to detect and track hostile non-state actors defending or guarding a nuclear weapon or special nuclear material in tactical conditions to include persons concealed in foliage or in dense urban environments. Hostile actors may also attempt concealment by blending into a non-hostile population or crowd. Solutions may be man-portable or mounted on an aerial vehicle or overhead asset. Preferred solutions: (1) are applicable to the greatest number of potential tactical conditions and environments; (2) maximize stand-off distances; (3) provide real-time or near real-time detection and tracking, and (4) if persistent surveillance is required, are unobservable or allow for clandestine emplacement and recovery of equipment as applicable. Solutions may include active means to elicit certain identifying behavior or response from hostile non-state actors and/or their equipment. Submissions should include a concept of operations for employment of the capability.

TOPIC: NT-18-DET-04***LOSS OF CUSTODY DETECTION***

DTRA seeks capabilities to detect special nuclear materials out of regulatory control. This may include state loss of control of nuclear weapons or special nuclear material applicable across multiple geographic areas, threat actors, and loss of control scenarios. These capabilities should not rely upon detection of ionizing radiation. This may include detection of non-state actor activities to modify an existing weapon or processes and materials to transform special nuclear material into a weapon. A concept of operational employment should be submitted with the proposal.

TOPIC: NT-18-DET-05***YIELD DETERMINATION OF SMALL UNDERGROUND NUCLEAR EXPLOSIONS***

DTRA seeks technical methods for detection, discrimination, determination and validation of yield magnitudes from low-yield (100 kg to kiloton) underground nuclear explosions using seismic or other remote sensing data from chemical or nuclear underground point explosions measured at local to regional distances (~50–150 km). DTRA seeks approaches that are technically sound, analytically explicable, predictive, and suitable to experimental validation. Potential solutions may include, but are not limited to:

- Analytic models tying seismic waveform features (e.g., amplitude, spacing, coda) to yield.
- High-reliability, automated, networked detection and characterization capability.
- Assessment of characteristics of seismic sensor networks (e.g., location, number of sensing nodes, and response) required to provide effective yield determination, including automated field systems.
- Consideration of local area topography at various possible siting elevations

- Assessment, analysis, and archiving of historical underground point-explosions (where yield and emplacement conditions can be verified, possibly including the National Nuclear Security Administration Source Physics Experiments) and seismic network data to provide quantitative examples to support analytic theory development and computational modeling.
- Assessment of other remote sensing data sources for determination of yield.

TOPIC: NT-18-DET-06

FIELD MONITORING OF RADIONUCLIDE GASES AND PARTICULATES FROM NUCLEAR TESTING

DTRA seeks advanced materials, methods, and technologies for the detection, collection, separation, and analysis of low-concentration radionuclide gases and particulates relevant to nuclear weapons testing. The desired solutions should have increased collection efficiency, sensitivity; higher capacity; faster and more effective separation; more reliable isotopic identification; and lower size, weight, and power compared to currently available options.

These methods may include, but are not limited to:

- Improved separation of noble gases from atmospheric whole air; particularly centrifugal separation and concentration methods.
- Improved field analysis of radionuclides.
- Autonomous ground detection, collection, separation, and analysis.
- Improved gas collection, separation, and analysis or components thereof at reduced size, weight, and power.

8.0 Other Information

8.1 Supplemental Information Volume Content Requirements

This volume contains supplemental data. Additional details about each specific item are located in the sections referenced below. This volume must address all of the items listed below. If any particular item is not relevant to the proposed effort, include a reference to the requested information and state that the particular information is not applicable in order to confirm a negative response.

8.1.1 Authorized Negotiators

Offerors must include the name, title, mailing address, telephone number, fax number, and e-mail address of the company, BPOC and any personnel authorized to negotiate with the Government and obligate the Offeror contractually.

8.1.2 Confirmed Proposal Expiration Date

Offerors shall provide written confirmation that cost proposals will remain valid for a

period of one year after the Phase II submission closing date. Offerors may be asked to revalidate their proposal expiration date.

8.1.3 Collaboration with Government Laboratories and FFRDCs

Proposed collaboration with a DoD laboratory should be clearly identified in the proposal and must be supported with a letter of intent from that laboratory's Commander.

Offerors choosing to use the services of Government Laboratories in the performance of work proposed may be required to enter into a Cooperative Research and Development Agreement (CRADA) with the Laboratory. A CRADA is not a FAR-based agreement; it is authorized by 15 U.S.C. § 3710(a). A CRADA will be separate from the DTRA procurement instrument, with its own unique terms, in particular related to Intellectual Property. It would be prudent for the Offeror to discuss those unique terms with the Laboratory prior to submitting a proposal under this BAA. DTRA will not facilitate, nor be involved in, the negotiation of the agreements with Government Laboratories.

8.1.4 Additional FFRDC Requirements

In accordance with FAR 17.503(e), DOE Order 481.1C and DOE Acquisition Regulation 970.1707-3, DOE FFRDC participants must provide a copy of the written certification from the DOE sponsor authorizing its performance of the proposed effort. The DOE sponsor must provide written certification that the proposed work:

- (1) is consistent with or complimentary to missions of DOE and the facility to which the work is to be assigned,
- (2) will not adversely impact programs assigned to the facility, and
- (3) will not create a detrimental future burden on DOE resources.

In accordance with FAR 17.503(e), 35.017(a)(2) and 35.017-3, FFRDC participants (other than DOE FFRDCs) must provide documentation from the FFRDC sponsor authorizing its performance of the proposed effort.

8.1.5 Representations and Certifications

Representations and certifications must be completed at the time of Phase II submission. The Offeror must complete the annual representations and certifications electronically via the SAM website at <http://www.sam.gov>. After reviewing the SAM information, the Offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, inclusive of the following:

- FAR 52.203-18, Prohibition on Contracting with Entities that Require Certain Internal Confidentiality Agreements-Representation;
- FAR 52.209-7, Information Regarding Responsibility Matters;
- FAR 52.209-11, Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction under any Federal Law;

- FAR 52.204-20, Predecessor of Offeror;
- DFARS 252.203-7005, Representation Relating to Compensation of Former DoD Officials;
- DFARS 252.204-7008, Compliance with Safeguarding Covered Defense Information Controls; and
- DFARS 252.247-7022, Representation of Extent of Transportation by Sea

NOTE: If any of the above mentioned provisions are not contained in the SAM database, the Offeror is required to complete and submit the form in Attachment 5.

Additionally, the Offeror is required to verify that the electronic representations and certifications are current, accurate, complete, and applicable to this BAA, including the business size standard applicable to the North American Industry Classification System code referenced (541711) for this BAA, as of the date of this offer, and are incorporated in this offer by reference (see FAR 4.1201).

8.1.6 Protection of Human Subjects

If the proposed work involves human subjects or materials, Offerors are required to outline the human use, to include the source of the human subjects or materials involved in the work. Further information may be required if the proposal is successful.

All work conducted under an award made from this BAA involving human subjects must be conducted in accordance with Title 32, Code of Federal Regulations (CFR), Part 219, 10 U.S.C. § 980, and DoD Instruction 3216.02, and, as applicable, 21 CFR Parts 11, 50, 56, the International Conference on Harmonization Good Clinical Practice guidelines, as well as other applicable federal and state regulations. Contractors must be cognizant of and abide by the additional restrictions and limitations imposed on the DoD regarding research involving human subjects, specifically as regards to vulnerable populations (32 CFR 219 modifications to subparts B-D of 45 CFR 46), recruitment of military research subjects (32 CFR 219), and surrogate consent (10 U.S.C. § 980).

DTRA Directive 3216.01 establishes the DTRA Human Subjects Protection Program, sets forth the policies, defines the applicable terms, and delineates the procedures necessary to ensure DTRA compliance with federal and DoD regulations and legislation governing human subject research. The regulations mandate that all DoD activities, components, and agencies protect the rights and welfare of human subjects of study in DoD supported research, development, test and evaluation, and related activities hereafter referred to as “research.” The requirement to comply with the regulations applies to new starts and to continuing research.

The DTRA Directive requires that research using human subjects may not begin or continue until the DTRA Research Oversight Board (ROB) has reviewed and approved the proposed protocol. Contractors and subcontractors are required to submit a valid federal assurance for their organization (institution, laboratory, facility) that has been issued by either DoD or the Department of Health and Human Services, and

documentation of review of proposed protocols by the local Institutional Review Board (IRB) to include consent forms for any planned research using human subjects to the ROB for its review through the contracting officer's representative (if assigned) or the contracting officer. The ROB review is separate from, and in addition to, local IRB review.

A study is considered to involve human research subjects if: 1) there is interaction with the subject (even simply talking to the subject qualifies; no needles are required); and 2) if the study involves collection and/or analysis of personal/private information about an individual, or if material used in the study contains links to such information.

Written approval to begin research or to subcontract for the use of human subjects under the proposed protocol will be provided in writing from the DTRA ROB, through the contracting officer. Both the contractor and the Government must maintain a copy of this approval. Any proposed modifications or amendments to the approved protocol or consent forms must be submitted to the local IRB and the DTRA ROB for review and approval. Examples of modifications/amendments to the protocol include but are not limited to:

- a change of the Principal Investigator;
- changes in duration or intensity of exposure to some stimulus or agent;
- changes in the information requested of volunteers, or changes to the use of specimens or data collected; or
- changes in perceived or measured risks or benefits to volunteers that require changes to the study.

Research pursuant to such modifications or amendments must not be initiated without IRB and ROB approval except when necessary to eliminate apparent and immediate hazards to the subject(s).

Research projects lasting more than one year require IRB review at least annually, or more frequently as required by the responsible IRB. ROB review and approval is required annually. The contractor or subcontractor must provide documentation of continued IRB review of protocols for ROB review and approval. Research must not continue without renewed ROB approval unless necessary to eliminate apparent and immediate hazards to the subject(s).

Clauses regarding human subject research will be included in all contracts involving human subjects. Non-compliance with any provision of this clause may result in withholding of payments under the contract pursuant to the terms and conditions. The Government shall not be responsible for any costs incurred for research involving human subjects prior to protocol approval by the ROB.

8.1.7 Animal Use

If the proposed research involves the use of live nonhuman vertebrate animals, Offerors

are required to describe the proposed animal use and type of animals being used. The Animal Care and Use Review Office (ACURO), a component of the US Army Medical Research and Materiel Command Office of Research Protections, must review and approve all animal use prior to the start of working with animals. Therefore, the contractor will be required to complete and submit the animal use appendix titled “Research Involving Animals”, after award of a contract, which can be found on the ACURO website:

https://mrmc-www.army.mil/index.cfm?pageid=Research_Protections.acuro.

Allow two to four months for regulatory review and approval processes for animal studies. Offerors must build the review time into their project schedules.

DoD Directive 3216.01, dated September 13, 2010, provides policy and requirements for the use of animals in DoD-funded research. The DoD definition of animal is any live nonhuman vertebrate. All proposals that involve the use of animals must be in compliance with DoD Directive 3216.01 and AR 40-33. For animals, the provisions include rules regarding animal acquisition, transport, care, handling, and use in: (i) 9 CFR parts 1-4, *Department of Agriculture rules that implement the Laboratory Animal Welfare Action of 1966* (U.S.C. § 2131-2156); and (ii) the “Guide for the Care and Use of Laboratory Animals,” National Institutes of Health Publication No. 86-23.

8.1.8 Organizational Conflict of Interest

Certain post-employment restrictions on former federal officers and employees may exist, including special Government employees (including but not limited to 18 U.S.C. § 207, the Procurement Integrity Act, 41 U.S.C. § 423, and FAR 3.104). If a prospective Offeror believes that a conflict of interest exists that relates to the above restrictions, the situation should be raised to the DTRA Contracting Officer before time and effort are expended in preparing a proposal. Send notification of potential conflict of interest via an e-mail message to the address listed in the BAA.

All Offerors and proposed subcontractors also must affirmatively disclose whether or not they are providing scientific, engineering and technical assistance, A&AS or similar support, through an active contract or subcontract, to any DTRA technical office(s) or the Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (ATSD-NCB). All disclosures must state which office(s) the Offeror supports, and identify the prime contract number. Disclosures must be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest must be disclosed in accordance with FAR 9.5, including facts not specifically described above. The disclosure must include a description of the action the Offeror has taken or proposes to take to avoid, neutralize, or mitigate such conflict.

8.1.9 Export Control Notification

Offerors are responsible for ensuring compliance with all export control laws and regulations that may be applicable to the export of and foreign access to their proposed

technologies. Offerors may consult with the Department of State with any questions regarding the International Traffic in Arms Regulation (ITAR) (22 CFR, Parts 120–130) and/or the Department of Commerce regarding the Export Administration Regulations (EAR) (15 CFR, Parts 730–774). The Department of State publishes guidance on the ITAR at <http://www.pmddtc.state.gov>. Department of Commerce publishes guidance on the EAR at <http://www.bis.doc.gov>.

8.1.10 Intellectual Property

8.1.10.1 Patents

Offerors must list any known patents, patent applications, or inventions which the Offeror may be required to license in order to perform the work described in the Offeror's proposal, or which the Government may be required to license to make or use the deliverables of the contract should the Offeror's proposal be selected for award. For any patent or patent application listed above, the Offeror must provide the patent number or patent application publication number, a summary of the patent or invention title, and indicate whether the Offeror is the patent or invention owner. If a patent or invention is in-licensed by the Offeror, identify the licensor.

If any listed patent, patent application or invention is owned or licensed by the Offeror, the Offeror must provide a statement, in writing, if it either owns or possesses the appropriate licensing rights to patent, patent application or invention to perform the work described in the proposal and/or to grant the Government a license to make or use the deliverables for this program. If any listed patent, patent application or invention is not owned or licensed by the Offeror, then the Offeror must explain how it will obtain a license, how the Government may obtain a license and/or whether the Offeror plans to obtain these rights on behalf of the Government.

Be advised that no patent, patent application or invention disclosure will be accepted if identified in the Data Rights Assertion list described in subsection 8.1.10.2 below. Existing inventions, patents and patent applications should be discussed in the above list. Government rights in any technology that might be invented or reduced to practice under the contract are addressed in the patent rights clause to be included in the contract.

8.1.10.2 Data Rights

Offers submitted in response to this BAA shall identify, to the extent known at the time an offer is submitted to the Government, the technical data or computer software that the Offeror, its subcontractors or suppliers, or potential subcontractors or suppliers, assert should be furnished to the Government with restrictions on use, release, or disclosure, in accordance with DFARS 252.227-7017, *Identification and Assertion of Use, Release or Disclosure Restrictions*, and DFARS 252.227-7028, *Technical Data or Computer Software Previously Delivered to the Government*. The Offeror's assertions, including the assertions of its subcontractors or suppliers or potential subcontractors or suppliers, shall be submitted as an attachment to its offer

in the following format, dated and signed by an official authorized to contractually obligate the Offeror. If the Offeror will deliver all technical data and computer software to the Government without restrictions, enter "NONE" in this table under the heading "Technical Data or Computer Software to be Furnished with Restrictions."

Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of Technical Data or Computer Software.

The Offeror asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data or computer software should be restricted:

Technical Data or Computer Software to be Furnished With Restrictions*	Basis for Assertion**	Asserted Rights Category* **	Name of Person Asserting Restrictions** **
(LIST)*** **	(LIST)	(LIST)	(LIST)

*For technical data (other than computer software documentation) pertaining to items, components, or processes developed at private expense, identify both the deliverable technical data and each such item, component, or process. For computer software or computer software documentation identify the software or documentation.

**Generally, development at private expense, either exclusively or partially, is the only basis for asserting restrictions. For technical data, other than computer software documentation, development refers to development of the item, component, or process to which the data pertain. The Government's rights in computer software documentation generally may not be restricted. For computer software, development refers to the software. Indicate whether development was accomplished exclusively or partially at private expense. If development was not accomplished at private expense, or for computer software documentation, enter the specific basis for asserting restrictions.

***Enter asserted rights category (e.g., government purpose license rights from a prior contract, rights in Small Business Innovation Research (SBIR) data generated under another contract, limited, restricted, or government purpose rights under this or a prior contract, or specially negotiated licenses).

****Corporation, individual, or other person, as appropriate.

*****Enter “none” when all data or software will be submitted without restrictions.

Date	_____
Printed Name and Title	_____
Signature	_____

Offerors responding to this BAA requesting an OTA shall specifically identify any asserted restrictions on the Government’s use of intellectual property contemplated under those award instruments. For this purpose, Offerors must propose specific Intellectual Property terms and conditions and a data deliverable list. Offerors are encouraged to model their data rights assertions list to the template provided in DFARS 252.227-7017.

8.1.11 Subcontracting Plan

Any Offeror, other than small businesses, submitting a proposal for an award with a value more than the amount listed in FAR 19.702(a)(1) and that has subcontracting possibilities, must submit a subcontracting plan in accordance with FAR 19.7. Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. § 637(d)), it is the policy of the Government to enable small business and small disadvantaged business concerns to be considered fairly as subcontractors to contractors performing work or rendering services as prime contractors or subcontractors under Government contracts, and to assure that prime contractors and subcontractors carry out this policy.

A subcontracting plan identifies the Offeror's approach to awarding subcontracts to small business, small disadvantaged business, women-owned small business, service-disabled veteran owned small business, and Historically Underutilized Business (HUB) Zone small business concerns, on this effort. A Defense Contract Management Agency (DCMA) approved master plan may be submitted in lieu of an individual contract plan. The narrative in the subcontract plan must address each element listed in FAR 19.704(a)(1)-(11). The plan must emphasize small business participation to the maximum extent practicable. The current DoD subcontracting goals are as follows:

<u>Percentage of subcontracted dollars</u>	
Small Business	34.5%

HUB Zone Small Business	3%
Small Disadvantaged Business	5%
Women-Owned Small Business Concerns	5%
Service-Disabled Veteran Owned Small Business	3%

Note: Provide rationale if the Small Disadvantaged Business goal cannot be achieved per DFARS 219.705-4(d), or if subcontracting possibilities do not exist (reference FAR 19.705-2(c)).

8.1.12 Identification of Team Members

Offerors shall include a list of team members (e.g., subcontractors/consultants) that are being proposed and their role in the proposed work (e.g., electrical engineer). Offerors shall also include the estimated percentage of the effort to be performed by the Offeror and percentage of work to be performed by proposed team members.

8.1.13 Statement of Current and Pending Support

Offerors must include a statement of current and pending support of all related work that is currently receiving or may potentially receive financial support. This information must be included for each investigator listed in the proposal.

8.1.14 Modified Pre-award Checklist – SF 1408

Any offeror awarded a cost type contract must be in compliance with FAR 16.301-3 “Limitations” restrictions. Specifically, the Offeror’s accounting system must be adequate for determining costs applicable to the contract; and will be subject to DCAA audit and surveillance during performance to provide reasonable assurance that efficient methods and effective cost controls are being used. Any Offeror that has not been subject to a DCAA pre- or post-award accounting system audit is required to submit a Modified Preaward Checklist (SF 1408), which will expedite the pre-award survey of the accounting system by DCAA. Refer to <http://www.dcaa.mil/> for further assistance preparing an adequate cost proposal. Offeror’s that have been subject to a DCAA accounting system audit shall provide the resultant audit report in lieu of the SF1408.

8.1.15 Forward Pricing Rate Agreement/Provisional Billing Rates

Offerors shall include a copy of any current Forward Pricing Rate Agreements or Provisional Billing Rate Agreements with Government agencies, such as DCMA, the Office of Naval Research, or the Department of Health and Human Services. If no agreement has been made with a Government representative, Offerors shall provide all rates, factors, and bases by year utilized in the development of the proposal and the basis of those rates and factors.

9.0 List of Attachments

- ATTACHMENT 1: Technology Readiness Level and Manufacturing Readiness Level Definitions
- ATTACHMENT 2: Statement of Work Template
- ATTACHMENT 3: Standard Form 1408
- ATTACHMENT 4: Cost Spreadsheet
- ATTACHMENT 5: Representations & Certifications Worksheet